## What Is Claimed Is:

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- 2 a central processing unit;
- 3 a bus;
- 4 memory;\and
- 5 a graphics\accelerator including:
- a texture value generating circuit for pixels describing a triangle,
- 7 and
- a cache storing texels used in generating texture values.
- 1 Claim 2. A computer as claimed in Claim 1 in which the texels for
- 2 generating texture values for a complete polygon are prefetched to the
- 3 cache during triangle setup:
- 1 Claim 3. A computer as claimed in Claim 1 in which texels
- 2 for generating texture values for a pixel are fetched to the cache on
- 3 demand.
- 1 Claim 4. A computer as claimed in Claim 1 in which the cache
- 2 includes a controller providing a policy for replacing texels in the cache.
- 1 Claim 5. A computer as claimed in Claim in which the policy for
- 2 replacement of texels depends on whether pixels sufficient to generate
- 3 texture values for a polygon fit into the cache.

22 NV30

- Claim 6. A computer as claimed in Claim in which the policy for replacement of texels depends on whether texels have been used in generating texture values for a last scan line of pixels.

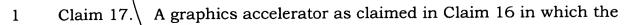
  Claim 7. A method for generating texture values for pixels defining a polygon to be displayed by a computer output device comprising the
- 3 steps of:
- 4 determining pixels defining a polygon,
- 5 generating texture coordinates for each pixel defining a polygon,
- 6 caching texels to be used in generating texture values for each pixel
- 7 defining a polygon, and
- 8 generating texture values for each pixel defining a polygon using texels
- 9 which have been cached.
- 1 Claim 8. A method as claimed in Claim 7 further comprising retaining
- 2 texels which have been cached until no longer needed for polygons for
- which pixels have been determined.
- 1 Claim 9. A method as claimed in Claim 7 further comprising replacing
- 2 texels which have been cached when no longer needed for polygons for
- 3 which pixels have been determined.
- 1 Claim 10. A method as claimed in Claim 7 in which the step of caching

23

- texels to be used in generating texture values for each pixel defining a
- 3 polygon includes prefetching all texels required to generate texture
- 4 values for a polygon.

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- 1 Claim 11. A method as claimed in Claim 7 in which the step of caching
- 2 texels to be used in generating texture values for each pixel defining a
- 3 polygon includes fetching texels as needed to generate texture values for
- 4 pixels.
- 1 Claim 12. A graphics accelerator comprising:
- 2 a texture coordinate generating circuit,
- a circuit responsive to pixel texture coordinates to select texels and
- 4 generate therefrom a texture value for any pixel the color of which is to
- 5 be modified by a texture,/and
- a texel cache for texels used by the circuit to generate a texture value for
- 7 any pixel.
- 1 Claim 13. A graphics accelerator as claimed in Claim 12 in which the
- 2 texel cache for texels used by the circuit to generate a texture value for
- any pixel further comprises a control circuit for placing texels in the
- 4 cache.
- 1 Claim 14. A graphics accelerator as claimed in Claim 13 in which the
- 2 control circuit prefetches texels to the cache for a complete polygon.
- 1 Claim 15. A graphics accelerator as claimed in Claim 13 in which the
- 2 control circuit fetches texels to the cache as needed for pixels.
- 1 Claim 16. A graphics accelerator as claimed in Claim 13 in which the
- 2 control circuit provides a policy for replacing texels in the cache.



- 2 policy for replacement of texels depends on whether texels sufficient to
- 3 generate texture values for a polygon fit into the cache.
- 1 Claim 18. A graphics accelerator as claimed in Claim 16 in which the
- 2 policy for replacement of texels depends on whether texels have been
- 3 used in generating texture values for a last scan line of pixels.

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25